

### **REMARKS/ARGUMENTS**

The Applicants have carefully considered this application in connection with the Examiner's Action and respectfully request reconsideration of this application in view of the foregoing amendment and the following remarks.

The Applicants originally submitted Claims 1-40 in the application. The Applicants previously canceled Claims 1-20 and 28-36. Herein the Applicants have cancelled Claim 22 and have amended Claims 21, 23, 24, 25, 26, 27, 37 and 38. No claims have been added. Accordingly, Claims 21, 23-27 and 37-40 are currently pending in the application.

#### **I. Rejection of Claims 21, 23-27 and 37-40 under 35 U.S.C. §112**

The Examiner rejected Claims 21, 23-27 and 37-40 under 35 U.S.C. §112, first paragraph, for failing to comply with the written description requirement. The Applicants have amended the foregoing claims to overcome the Examiner's objection. The Applicants respectfully request the Examiner to withdraw the rejection of Claims 21, 23-27 and 37-40 under 35 U.S.C. §112.

#### **II. Claim Objection**

The Examiner rejected Claim 37 because of certain informalities. The language correction required by the Examiner has been made. The Applicants respectfully request the Examiner to withdraw this objection.

### III. Rejection of Claims 21, 23-27 and 37-40 under 35 U.S.C. §103

The Examiner rejected Claims 21 and 23-27 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,319,799 to Ouyang, *et al.* (Ouyang), in view of U.S. Patent No. 4,879,256 to Bean, *et al.* (Bean). Claims 37-40 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Ouyang in view of Bean and U.S. Patent No. 7,067,856 to Ramadani, *et al.* (Ramadani). As the Examiner is no doubt aware, determination of obviousness requires consideration of the invention considered as a whole; the inquiry is not whether each element exists in the prior art, but whether the prior art made obvious the invention as a whole. Furthermore, there must be some suggestion or teaching in the art that would motivate one of ordinary skill in the art to arrive at the claimed invention; a reference that teaches away from a claimed invention strongly indicates nonobviousness.

Moreover, to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure.

Initially addressing the Examiner's rejection of Claims 21 and 23-27 under 35 U.S.C. §103(a) as unpatentable over Ouyang in view of Bean, Ouyang discloses a MOSFET that incorporates a heterostructure quantum well in the conducting channel. (Abstract). Ouyang does not disclose a co-

doped germanium buried layer that has a dopant concentration ranging from about  $1\text{E}15$  atoms/cm<sup>3</sup> to about  $1\text{E}20$  atoms/cm<sup>3</sup> located over a doped substrate where the doped substrate has a dopant concentration ranging from about  $1\text{E}14$  atoms/cm<sup>3</sup> to about  $1\text{E}15$  atoms/cm<sup>3</sup>. Nor does Ouyang disclose a doped epitaxial layer located over the co-doped germanium layer where the doped epitaxial layer has a dopant concentration ranging from about  $1\text{E}14$  atoms/cm<sup>3</sup> to about  $1\text{E}15$  atoms/cm<sup>3</sup>.

Bean does not overcome the Ouyang shortcoming. Bean also does not disclose a co-doped germanium buried layer that has a dopant concentration ranging from about  $1\text{E}15$  atoms/cm<sup>3</sup> to about  $1\text{E}20$  atoms/cm<sup>3</sup> located over a doped substrate where the doped substrate has a dopant concentration ranging from about  $1\text{E}14$  atoms/cm<sup>3</sup> to about  $1\text{E}15$  atoms/cm<sup>3</sup>. Nor does Bean disclose a doped epitaxial layer located over the co-doped germanium layer where the doped epitaxial layer has a dopant concentration ranging from about  $1\text{E}14$  atoms/cm<sup>3</sup> to about  $1\text{E}15$  atoms/cm<sup>3</sup>.

Although certain elements of the present invention set forth in Claim 21 are present in Ouyang and Bean, neither Ouyang nor Bean teach or suggest the beneficial aspects produced by the structure described in independent Claim 21. Furthermore, although Ouyang and Bean may be in a similar field of endeavor, nothing in either is taught or suggested as to how they could be combined in the manner disclosed in independent Claim 21. Thus, Ouyang, by itself or in combination with Bean, does not render the invention claimed in independent Claim 21 obvious. Inasmuch as Claims 23-27 are each ultimately dependent on Claim 21, Claims 23-27 are also not obvious over Ouyang in view of Bean. Therefore, the Applicants respectfully request the Examiner to withdraw the rejection

of Claims 21 and 23-27 under 35 U.S.C. §103(a).

Turning now to the rejection of Claims 37-40 under 35 U.S.C. §103(a) as being unpatentable over Ouyang in view of Bean and U.S. Patent No. 7,067,856 to Ramadanani, *et al.* (Ramadanani), the foregoing discussion with respect to Ouyang and Bean is equally relevant to the rejection of independent Claim 37. Ramadanani does not overcome the shortcoming of Ouyang and Bean for a like reason; that is, it does not disclose does not disclose a co-doped germanium buried layer that has a dopant concentration ranging from about  $1\text{E}15$  atoms/ $\text{cm}^3$  to about  $1\text{E}20$  atoms/ $\text{cm}^3$  located over a doped substrate where the doped substrate has a dopant concentration ranging from about  $1\text{E}14$  atoms/ $\text{cm}^3$  to about  $1\text{E}15$  atoms/ $\text{cm}^3$ . Nor does Ramadanani disclose a doped epitaxial layer located over the co-doped germanium layer where the doped epitaxial layer has a dopant concentration ranging from about  $1\text{E}14$  atoms/ $\text{cm}^3$  to about  $1\text{E}15$  atoms/ $\text{cm}^3$ . Thus, Ouyang, by itself or in combination with Bean and Ramadanani, does not render obvious the invention disclosed in independent Claim 37. Inasmuch as Claims 38-40 are each dependent on Claim 37, Claims 38-40 are not obvious over Ouyang in view of Bean and Ramadanani. The Applicants respectfully request the Examiner to withdraw the rejection of Claims 37-40 under 35 U.S.C. §103(a).

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claims 21, 23-27 and 37-40 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Examiner to withdraw the rejection.

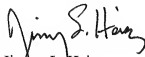
#### **IV. Conclusion**

In view of the foregoing amendment and remarks, the Applicants now see all of the claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 21, 23-27 and 37-40.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 08-2395.

Respectfully submitted,

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